

BONE RENOVATION LESSON PLAN

LEARNING OBJECTIVES

The student will be able to:

- Identify the steps in the process of bone renovation
- Place the steps of bone renovation in correct order
- Identify a body process similar to bone renovation

TIME

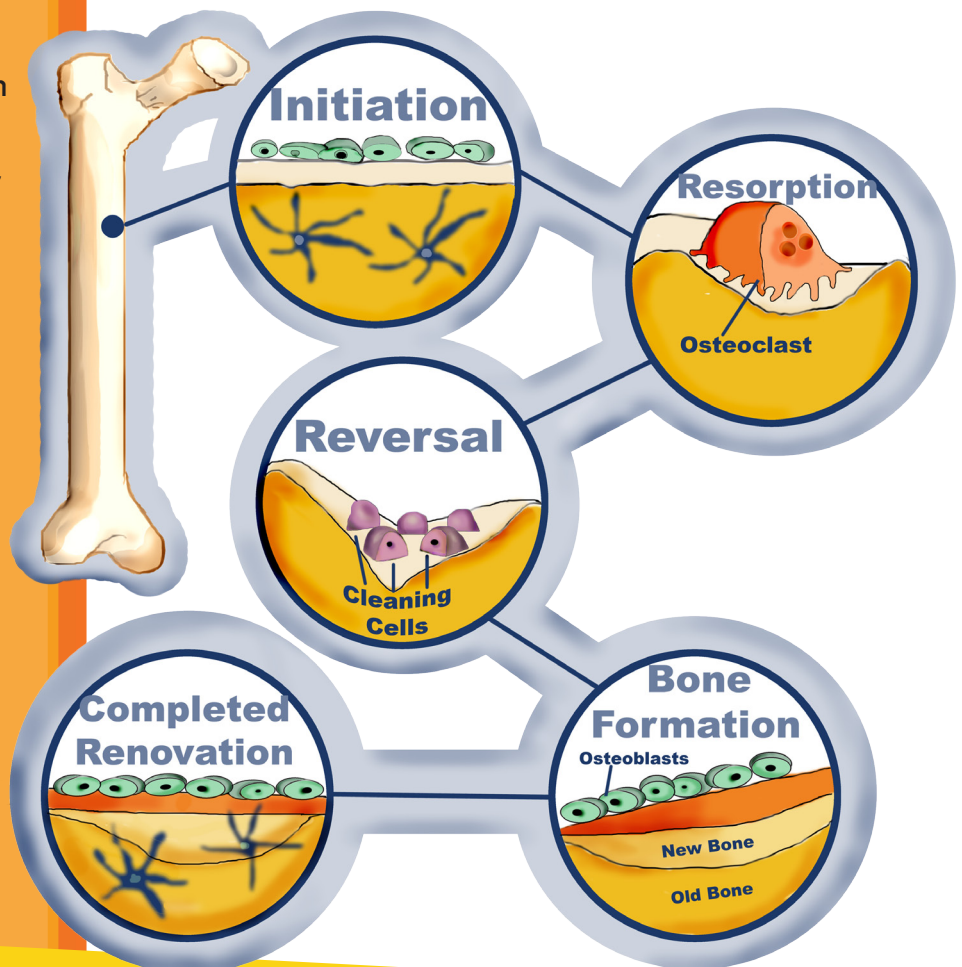
1-2 hours

GRADE LEVEL

5-8th grade

TOPICS COVERED

- Bone Renovation
- Bone Health
- Body Processes



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SEPA SCIENCE EDUCATION
PARTNERSHIP AWARD



DUQUESNE
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OVERVIEW

After viewing the Scientastic episode, “Sticks and Stones,” have the students create a visual aid or media which depicts the process of bone renovation. Students can create flow-charts, PowerPoints, storyboards, or short movies. As an extension activity, have students compare bone renovation to another part of the part which constantly renews itself.

STANDARDS

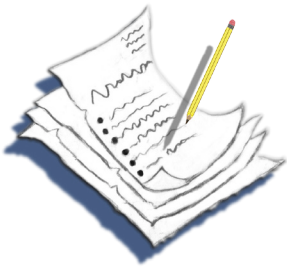
NATIONAL

- **TEACHING STANDARD A: Teachers of science plan an inquiry-based science program for their students.**

STATE

- **3.3.4.A. Know the similarities and differences of living things.**
 - » Identify life processes of living things (e.g., growth, digestion, react to environment).
- **3.3.4.B. Know that living things are made up of parts that have specific functions.**
 - » Determine how different parts of a living thing work together to make the organism function.

MATERIALS, RESOURCES, PREPARATION



PROVIDED MATERIALS

- Bone Renovation Worksheet

ADDITIONAL MATERIALS

- Scientastic: “Sticks and Stones” DVD

EXTRA RESOURCES

Visit the web site www.scientasticshow.com to find more information and activities about the bone. Click the tab “the show“ to find it! The web site includes background information on the bone, including common injuries and regenerative medicine research, a series of videos of experts discussing the same topics, and many suggestions for field trips, games and other sites to visit.



SET-UP

Show the Scientastic episode “**Sticks and Stones**” prior to starting the lesson.
Length 25 min

PROCEDURES

ANTICIPATORY SET

Display the following question as the students enter class,

“Are your bones the same as when you born? 2 years ago? a month ago? Why or why not?”

Have students journal on this question for roughly 5 minutes. Encourage the students to reference the Sticks and Stones episode in their answers and to include any artwork, diagrams, or graphic organizers that help them to answer the question. After the students have had ample time to brainstorm with this question, allow students to share their answers on the board or through personal responder device software. Lead the class in a short discussion about tissue and bone renovation.

ACTIVITY

Break the students into small groups and provide each group with a Bone Renovation Worksheet and access to the Scientastic website and other education resources. Each group will first use the Bone Renovation worksheet to divide the process of bone renovation into 4-6 steps. The group will then put these steps into some form of a visual aid or media, such as a flowchart, PointPoint, Prezi, storyboard, or short movie. The media should include written descriptions, pictures, color, and clear transitions. The students will have the entire class period to create their media.

CLOSURE

Students will display their work around the classroom and on the classroom website. Each group will take 2 minute to show their work to their classmates and explain, in their own words, the process of bone renovation.

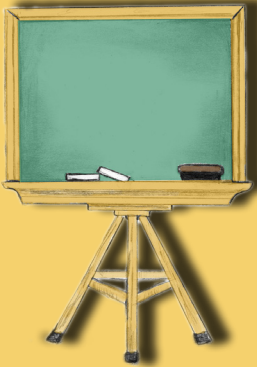
EXTENSIONS/ASSESSMENTS

For homework, have each group research another part of the body which constantly renews itself. Have students describe the process, how it is similar to bone renovation, and how it is different. Have the students record all findings.

ADAPTATIONS

FOR LOWER LEVEL STUDENTS

- Provide the groups with a blank flowchart to fill in the steps in place of the Bone Renovation Worksheet.
- Provide the students with the steps in a random order. Ask the students to first put the steps in order, and then complete the activity.
- Have the students create a bone song or dance to accompany their project.



FOR HIGHER LEVEL STUDENTS

- Have students not only list and present the steps in bone renovation, but also the steps that occur when a broken bone repairs itself
- Compare and contrast bone renovation and bone repair
- Have the students create a bone song or dance to accompany their project.

BONE RENOVATION WORKSHEET

NAME:

DATE:

DIRECTIONS

1. Using the “Sticks and Stones” DVD, the Scientastic website, and any other credible resources , create a flow-chart that depicts the process of bone renovation. In the space provided, sketch, brainstorm, or storyboard the process of bone renovation.

2. Using your ideas from above, put the process of bone renovation into your own words and display the information in a creative and informative format such as PowerPoint, Prezi, an illustrated storyboard, or short movie. The presentation should include accurate information and relevant illustrations.